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MAY 3 1924

PENCIL POINTS

A Journal for the Drafting Room

SKETCHING AND RENDERING IN PENCIL, BY ARTHUR L. GUPTILL. PERSPECTIVE DRAWING, BY PAUL VALENTI. THE USE OF SCALE MODELS, BY FREDERIC C. HIRONS. PRESENTATION DRAWINGS, BY FRANCIS S. SWALES. DETAILS BY DENNISON & HIRONS. FIGURE STUDY BY JULES GUERIN

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PENCIL POINTS

VOLUME 1 DECEMBER 1920 NUMBER 7

EN ROUTE

GATHERING moss is not a noticeable tendency among draftsmen. Many a good man has worked in the offices of more good and nearly-good architects than he can readily name. There seems to be something about drafting-room work or draftsmen in general that makes for a tendency to keep going, to move from place to place, often for the very sake of change.

The great fluctuation of work in most architectural offices, calling for the alternate increase and decrease of the staff at frequent and irregular intervals, may be, in some degree, responsible for this tendency, for a line of work in which the employment is largely of a temporary character appeals to the man who enjoys the freedom of the open road, rather than to the man whose desire is to stay placed, and it tends to develop a roving disposition in those who do not possess it naturally.

Very often, no doubt, a change of position is sought as a relief from the close application to and monotony of work over the drafting board, new surroundings providing the fresh interest needed—so long as they remain new.

Variety of experience is a good thing—but there is not a great deal of variety about it after all—drafting is, well, drafting. Much can, nevertheless, be learned through being in the office of one good man after another. Undoubtedly the greatest benefit might well come through contact with a sucession of good architects, through the influence of their different personalities, their appreciation of good design, their faculty for organization, their keenness and energy. The drafting room is, however, too often a place in which these qualities of the architect are not felt in a way to inspire or help the members of his staff in any great degree.

It is safe to say that most draftsmen come sooner or later to a point where they recognize that they have been going a long while without getting anywhere and wish that they had taken some means of going ahead.

The atelier is one of these means of progress, the architectural club is another and the aim of PENCIL POINTS is to convey special knowledge through the co-operation of many of the ablest men, to provide a medium for the exchange of ideas among its readers and to assist in the work of the atelier, school and club.

Just as soon as a man begins systematic study in the stimulating atmosphere of the atelier, a new sense of purpose comes, unless he is different from most fellows,—a sense of being headed for a goal with a good prospect of reaching it. He is not merely *en route* but has a destination. The old restlessness, the chafing at the dead standstill of things, that has most likely been at the back of his constant changing about, is likely to go, for a new channel of thought and activity has been opened. Then too, the work on his board is likely to take on a new meaning and interest to the man who is studying design, for he is likely to feel himself at least potentially an architect with a more clear perception of the architect's intention and greater sympathy with his development of the design. The work is likely to be monotonous no longer and close application to it is a pleasure as a means of doing his part in giving expression to the architect's idea, which now interests him as the solution of a problem. It seems as though the obvious cure for the all-too-common drifting is to get interested in going ahead—with the guidance of a man of ability and experience and in the company of men who have a purpose.

The broadening influence of the architectural club is a big help. The interesting talks by able men, the exhibitions and the social affairs supply the needed stimulus and the needed variety—a variety never found in changing from office to office or from city to city, for offices and cities are pretty much alike everywhere, especially when one is more or less a stranger. But the club affords a means of contact. The architect who in his own office, burdened with the cares of his practice, may be uncommunicative and uninspiring often reveals an unsuspected degree of brilliancy, genialty and helpfulness at a club in which he is interested.

The man of training and experience will find in the atelier and in the club opportunities for further development, for nothing crystalizes ones ideas and strengthens ones grasp upon truths so effectively as the effort to teach them to others, and the exercise of leadership develops the ability to lead.

The architect who gives some of his time to an atelier or club has the consciousness of having helped less-experienced men who want to help themselves—who want to get somewhere.

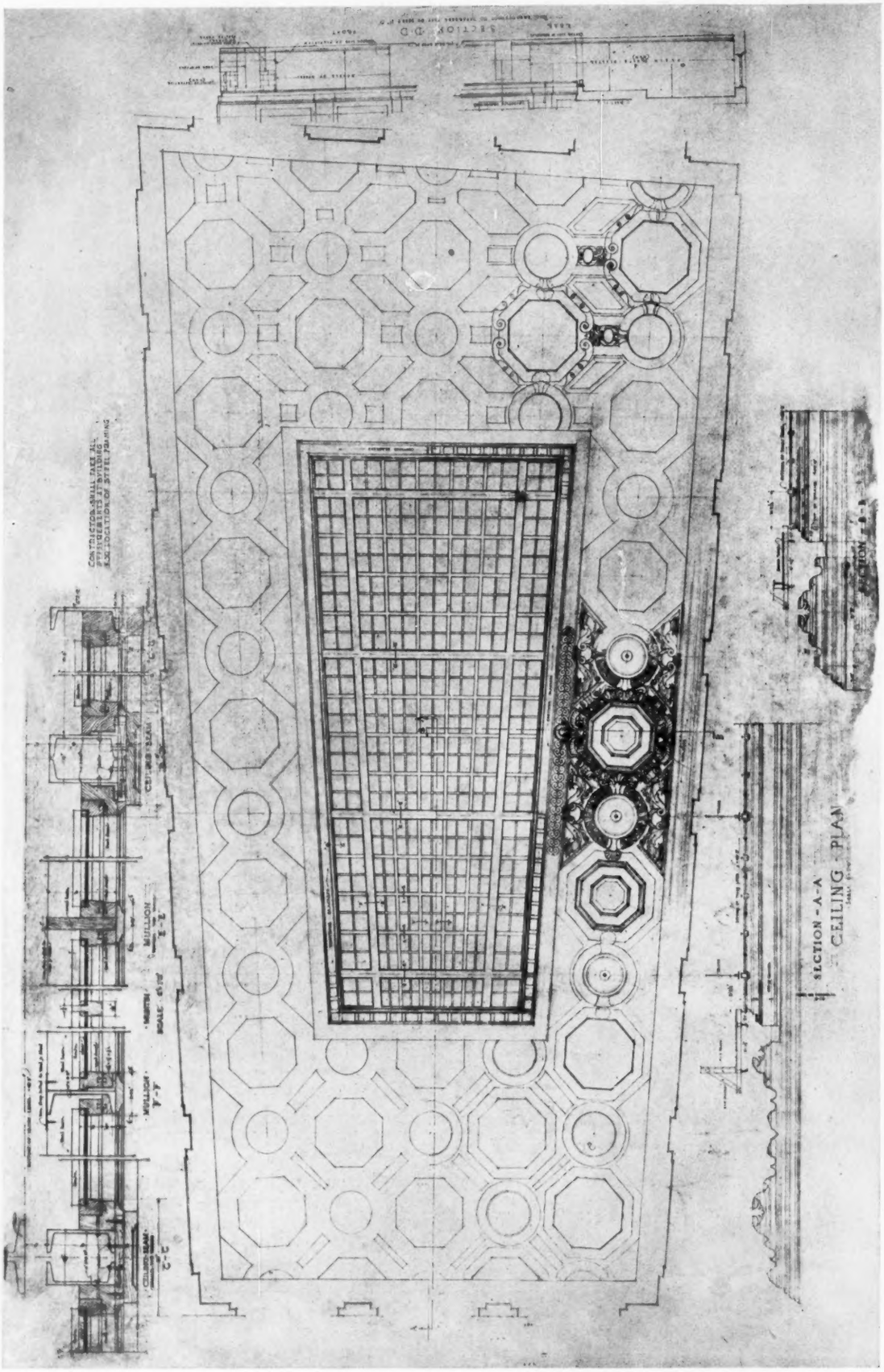


Figure 9. Plan of Ceiling for National State Bank, Elizabeth, N. J., Dennison & Hirons, Architects. Drawn at ½-inch scale after design had been studied by means of model

THE USE OF SCALE MODELS, PART II

BY FREDERIC C. HIRONS

In the article of which this is the second installment, Mr. Frederic C. Hirons, of the firm of Dennison & Hirons, Architects, points out the practical advantages in the use of scale models for study during the designing of buildings and explains methods of procedure, step-by-step. The process as applied to the interior of a bank building is described in this installment. The working out of other problems will be taken up in the same manner in following issues.—ED.

THE ceiling design shown in photograph of the model on this page is a ¼-inch scale study for the ceiling of an irregular-shaped room. It was desired by the architects to give this ceiling somewhat the same character that is seen in some of the ceilings of the Palazzo Ducale at Venice, but, owing to the irregular shape of the room, it was rather doubtful whether or not this ceiling scheme could be successfully worked out. For this reason it was deemed advisable to make a ¼-inch scale model in order to see the general effect. The effect obtained being satisfactory, the ½-inch and 1½-inch scale drawings shown on pages 4 and 6 and on Plate XXV of the plate section, were then made.

In the drawing of the walls of the room the character of the ornament in the frieze was thought more French than Italian and this it was deemed advisable to modify so as to be more in keeping with the rest of the room. These drawings together with the profiles at 1½ inch scale were given to the modellers, and they were told about the character of this ornament and shown in various books and photographs, etc. the spirit that was desired in this frieze. They then proceeded with the 1½-inch scale model shown on page 6. After the mouldings were run and the model laid up in plaster, the parts that were ornamental and in relief were done in plasteline, the modeller blocked in all the ornament in a broad, sketchy manner, then telephoned to the architects to come to the shop and go over the thing for massing of ornament, general relief and projection of decorative parts, etc. The design was discussed and suggestions were made on both sides. This procedure was repeated probably four times, each time greater attention was paid to the detail and finished ornament. From this latter model the draftsmen made full size profile drawings of all mouldings and the work was then put up to full size of execution, as shown by the photographs on pages 6 and 8.

Fig. 8. Model of Ceiling in The National State Bank at Elizabeth, N. J. Made at ¼ in scale. Dennison & Hirons, Architects

This 1½-inch scale model, when it had served the purpose of a guide for the making of the full-size models, was sent to the painters and was used in studying the color scheme of the walls and ceiling. This model was worked upon and the color treatment changed several times before the color scheme was thought to give about the effect desired. This model was then sent to the building and one bay of the ceiling of the room was painted like the small 1½-inch scale study. The effect was considerably too dark. It was decided that the same general color scheme should be kept but made quite a little lighter. In studying a problem of this kind, it would be very little more work to carry the study of the 1½-inch

(*Continued on page* 25)

Figure 11. Full-size Models of Details for Ceiling in the National State Bank, Elizabeth, N. J. Dennison & Hirons, Architects

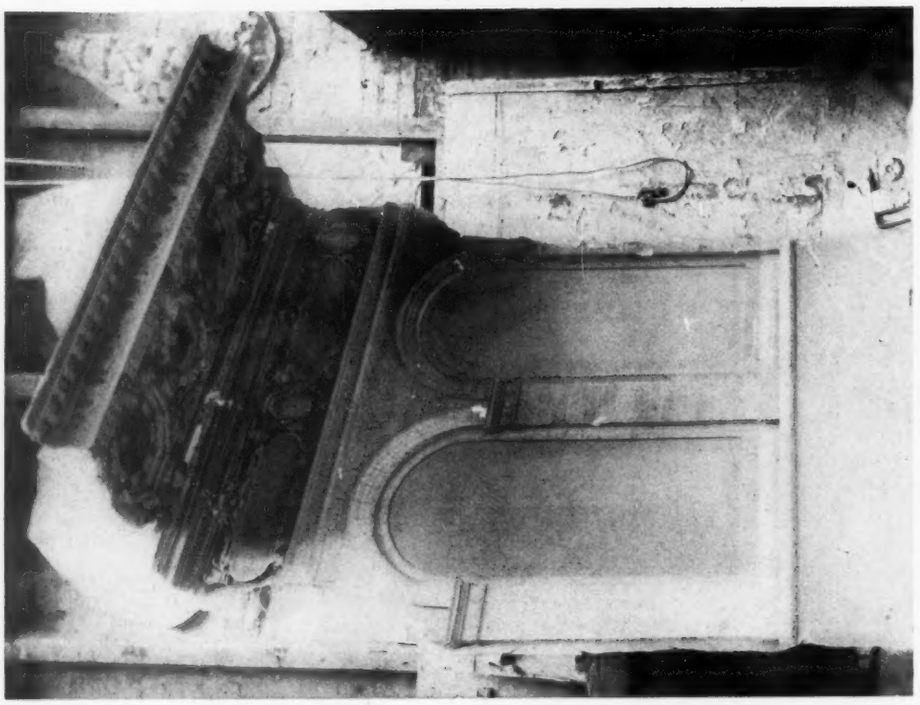


Figure 10. Model of Wall and Ceiling Detail, (1½ inch scale)

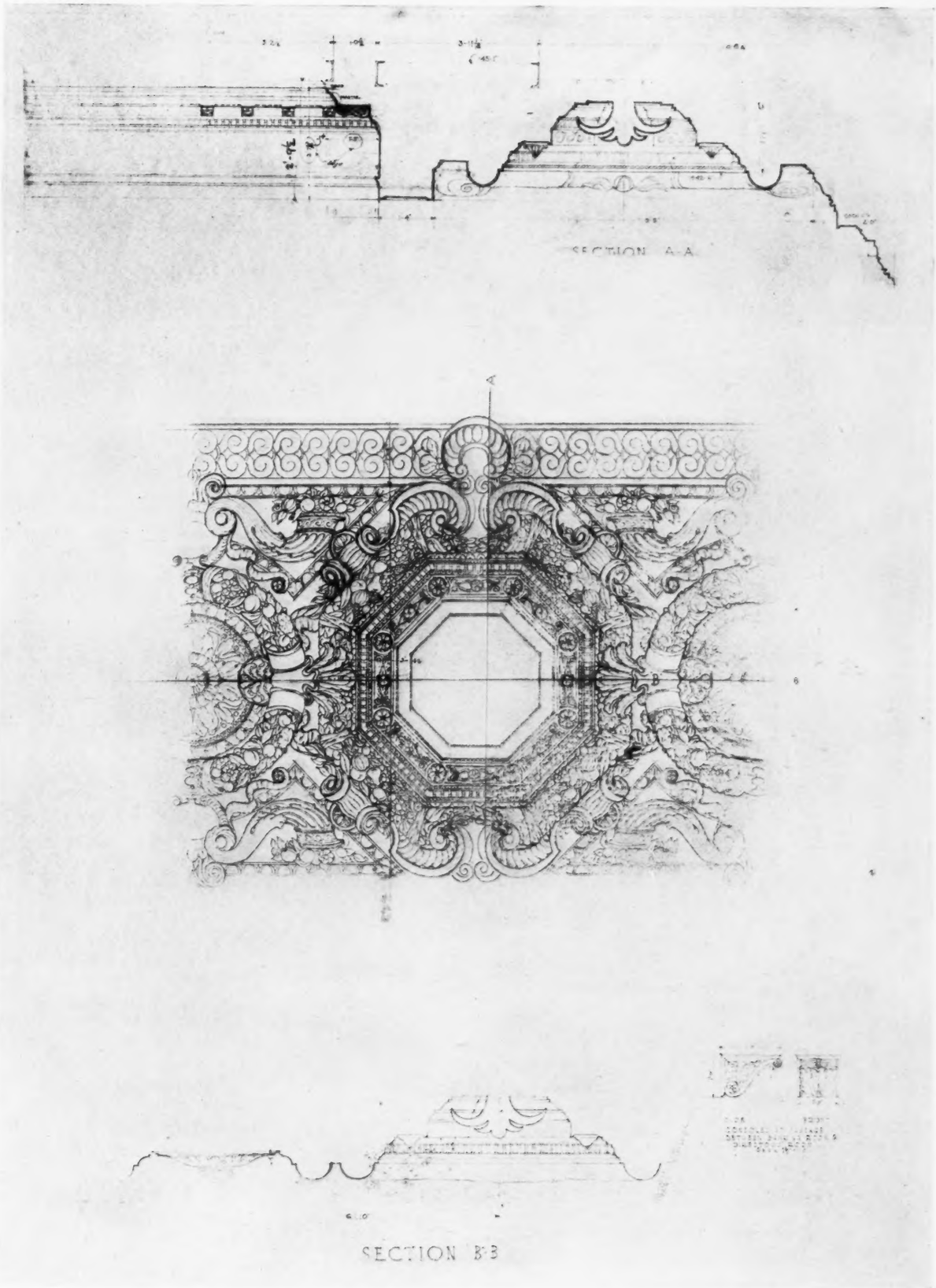


Figure 12. Drawing (1½-inch scale) of Detail for Ceiling in National State Bank, Elizabeth, N. J.
Dennison & Hirons, Architects

Figure 13. Full-size Model of Detail of Ceiling for The National State Bank, Elizabeth, N. J.
Dennison & Hirons, Architects

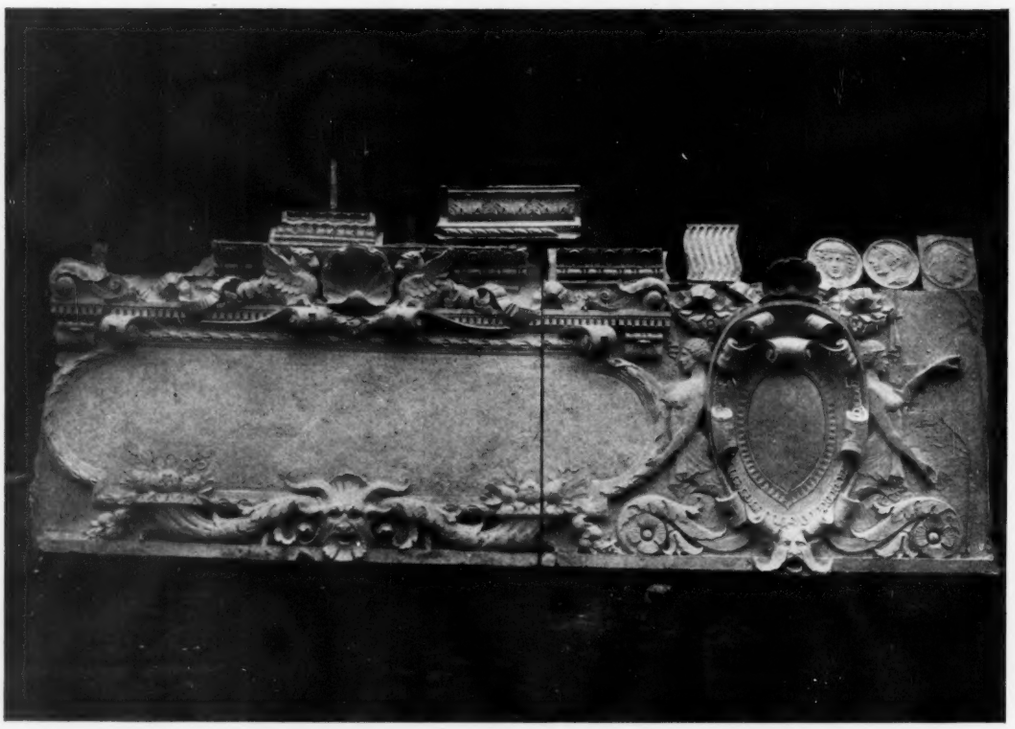
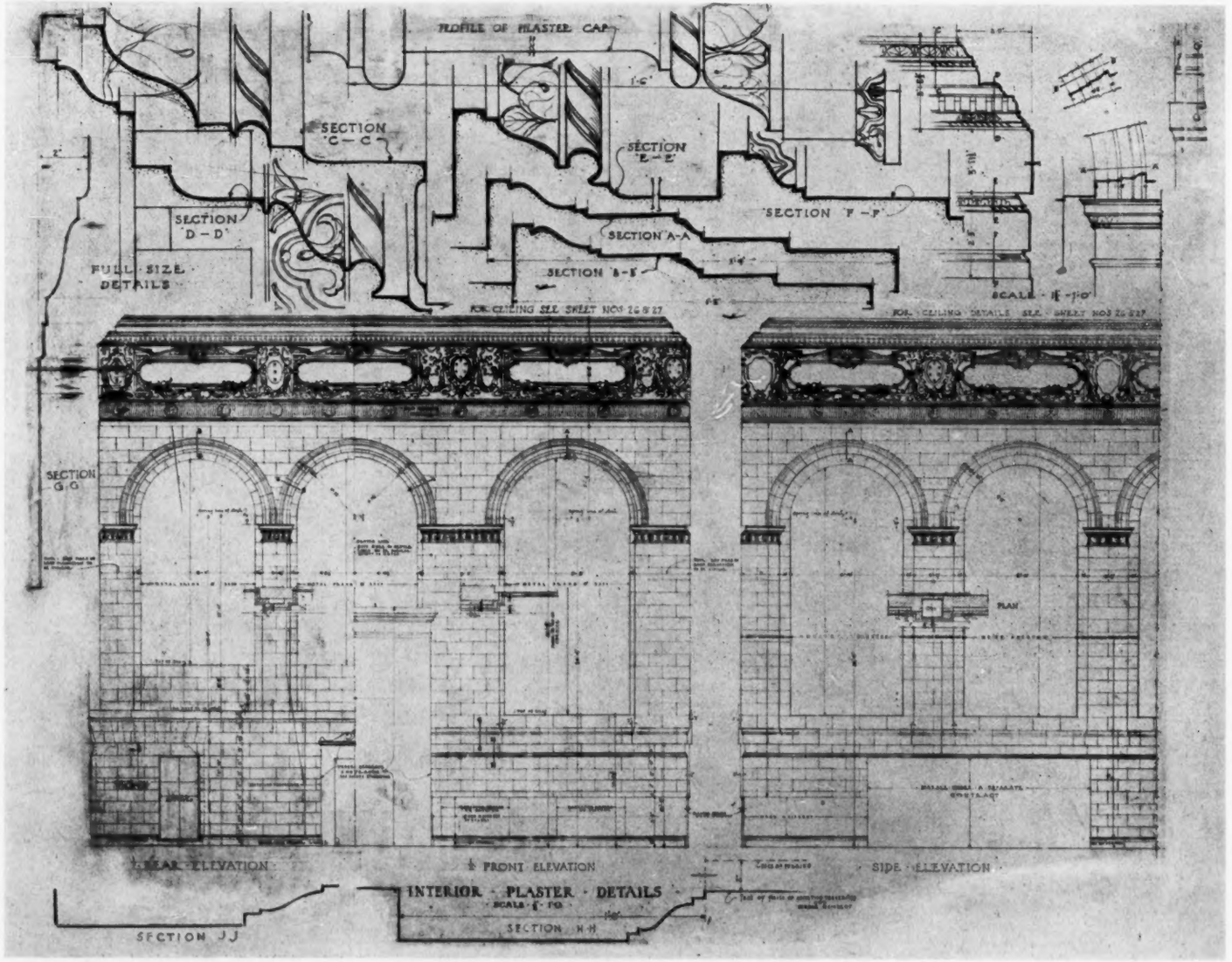


Figure 14. Full-size Model of Detail of Wall Treatment in the National State Bank, Elizabeth, N. J.
Dennison & Hirons, Architects

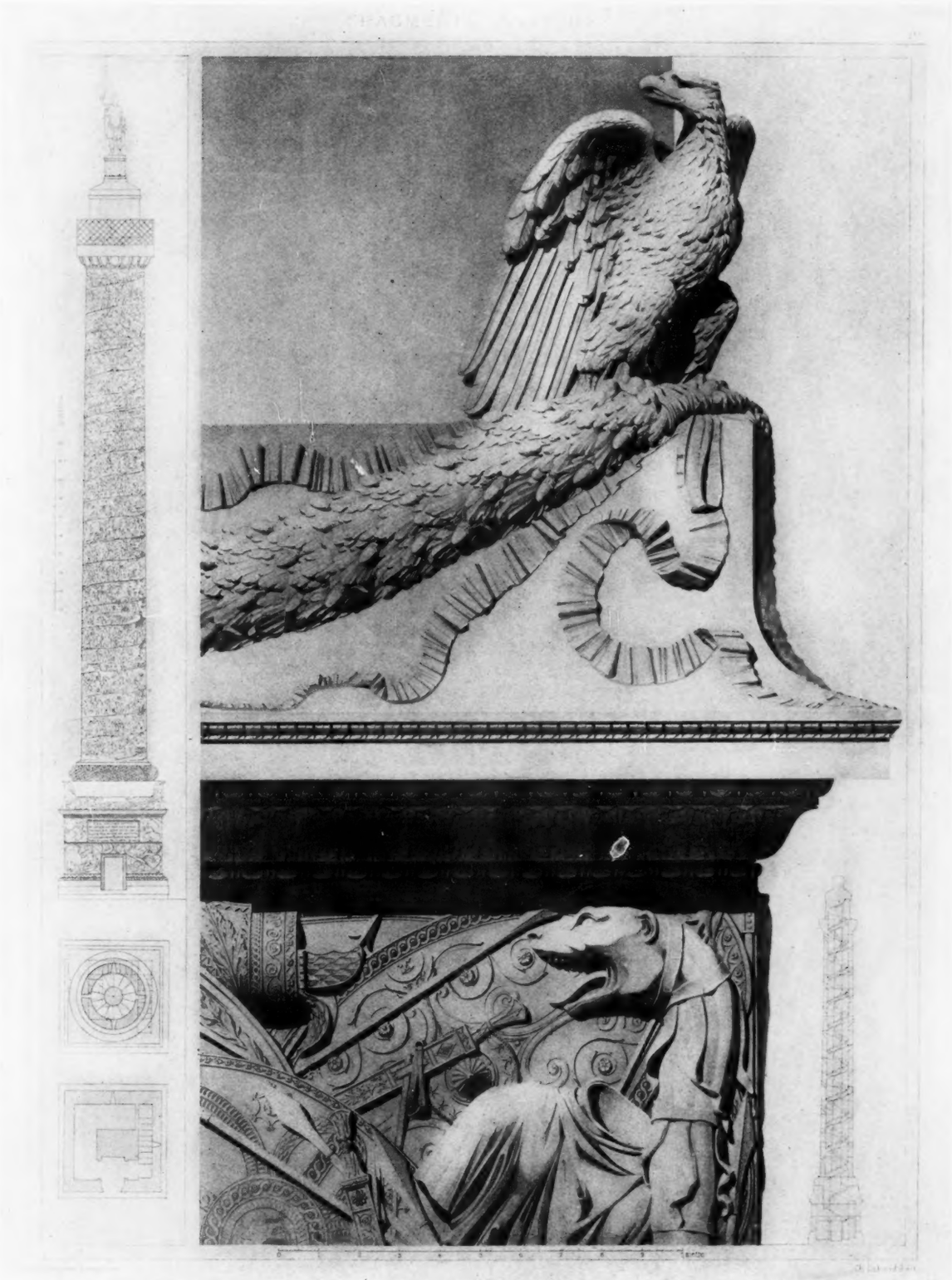


INTERIOR PLASTER DETAILS

NATIONAL STATE BANK, ELIZABETH, N. J.

DENNISON & HIRONS, ARCHITECTS

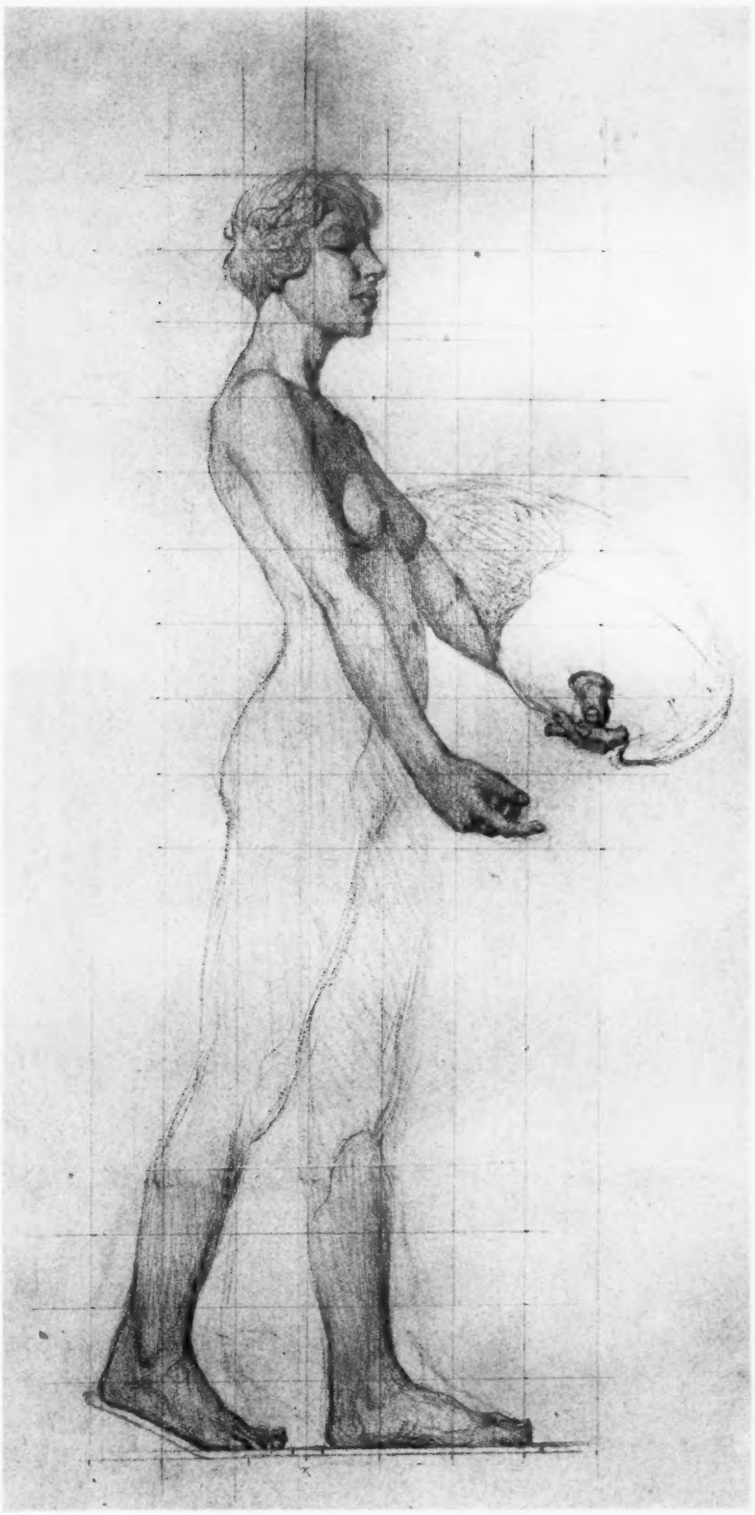
A detail sheet from the set of drawings for the National State Bank at Elizabeth, N. J., by Dennison & Hirons, is reproduced over the page. This drawing of interior plaster details represents a scheme of wall treatment that was carefully studied by the architects with the aid of scale models. A description of the use of these models will be found in the article by Mr. Frederic C. Hirons in this issue.



THE COLUMN OF TRAJAN, ROME

RESTORATION BY M. GINAIN
FROM H. D'ESPOUY'S "FRAGMENTS D'ARCHITECTURE ANTIQUE"

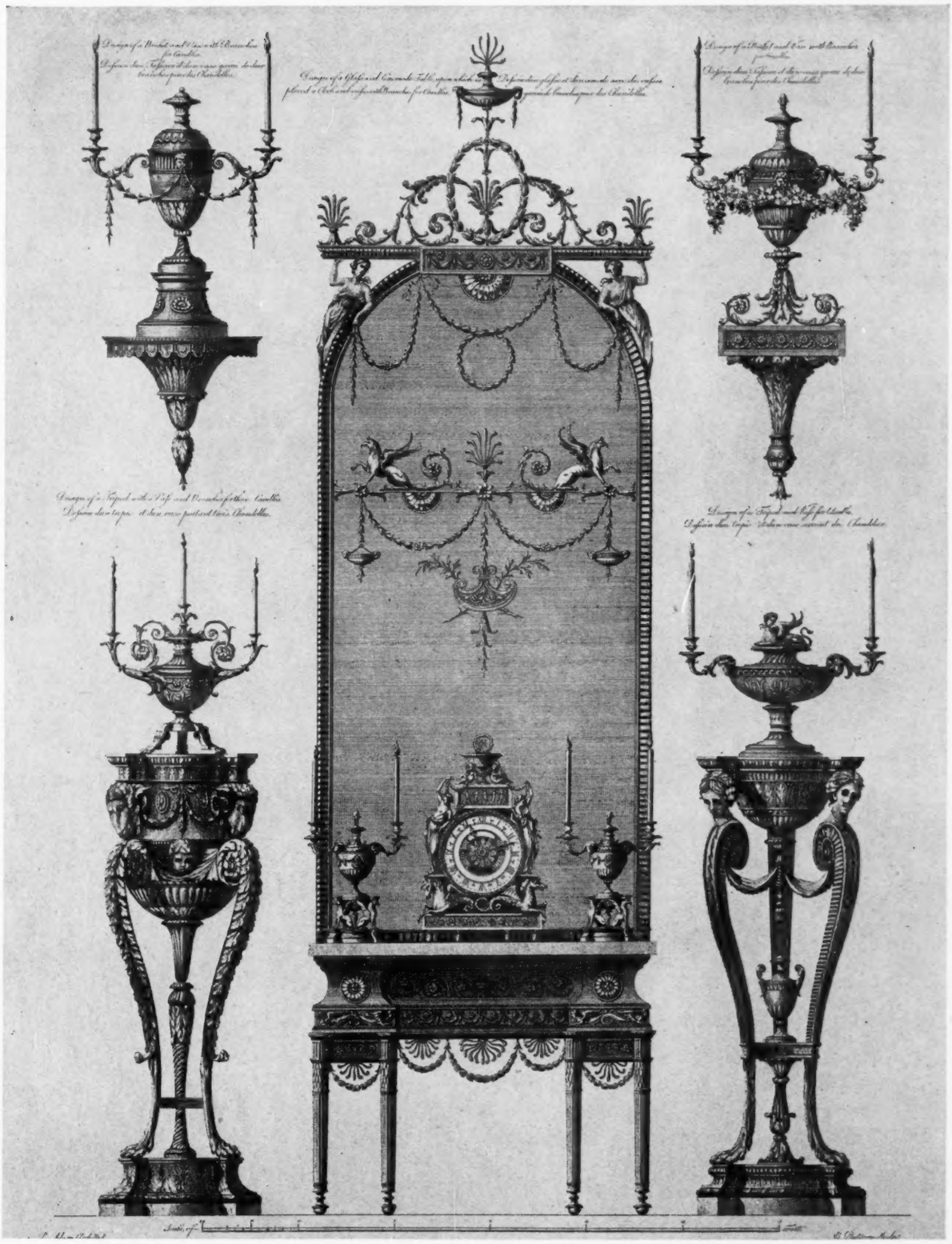
On the other side of this sheet is reproduced a restoration by M. Ginain, of the column which was raised in the middle of The Forum of Trajan and was dedicated to that emperor by the senate and the Roman people in commemoration of the victory over the Dacians. The date of construction was probably about 113 A. D. This monument is composed of blocks of Carrara marble held together by bronze dowels. The bas-reliefs form a continuous series that mount in a spiral from the base to the summit, and they represent incidents in the wars of Trajan. It is believed that this column was erected not only as a monument of victory, but that it was also the intention of Trajan to be buried beneath it.



PAINTING

STUDY BY JULES GUERIN FOR ONE OF THE SYMBOLIC FIGURES IN ONE OF THE MURAL DECORATIONS IN THE LINCOLN MEMORIAL, WASHINGTON, D. C. HENRY BACON, ARCHITECT

The drawing by Mr. Jules Guerin reproduced on the other side of this sheet is the artist's study for one of the figures in the mural decorations in the new Lincoln Memorial at Washington, D. C. This building, of which Mr. Henry Bacon was the architect, is one of the finest memorials ever built. The study here reproduced, like the others of this series, was drawn from life.



DESIGNS BY ROBERT ADAM

ORIGINALLY PUBLISHED IN 1775 IN "THE WORKS IN ARCHITECTURE" OF R. & J. ADAM, AND REPRINTED IN "THE DECORATIVE WORK OF R. & J. ADAM"

The designs for furniture and decorative fitments shown over the page were inspired by Robert Adam's study of the remains of Classic art during his stay in Italy, beginning in 1754. Robert Adam was born at Fife, Scotland, in 1728, was appointed architect to George III of England in 1762, and he died in 1792.

PERSPECTIVE DRAWING, PART VII

BY PAUL VALENTI

IN passing it will be well to cover one more case in order to make our demonstrations more complete. That is the case where we wish to consider the diagonal of an object as the maximum dimension in determining the distance points.

This is a very simple matter. Take for example our picture *ABCD* (Figure 20) and one of the diagonals *AD*. First center in *V* with radius *VA*, draw arc of circle *AX*, and in similar manner with radius *VD*, draw arc of circle *DX*. *XY*=*AP* or the diagonal.

Raise perpendiculars *XX'* and *YY'* respectively, to the ground line. Proceeding center in point *E* and by the process of bisecting find the angle of 22½ degrees in *EG-EH*. Then from point *X'* draw line *YH* parallel to *EG*. Uniting points *X'* and *H* we will obtain at point *H* an angle of 45 degrees (2x22½), or the angle necessary to embrace our picture.

Centering in point *E* with radius *EH* and describing a half circle to the ground line, thence a perpendicular to the horizon line, we will then find our distance points in points *D*. Exactly the same thing applies in the case of Figure 21 on this page.

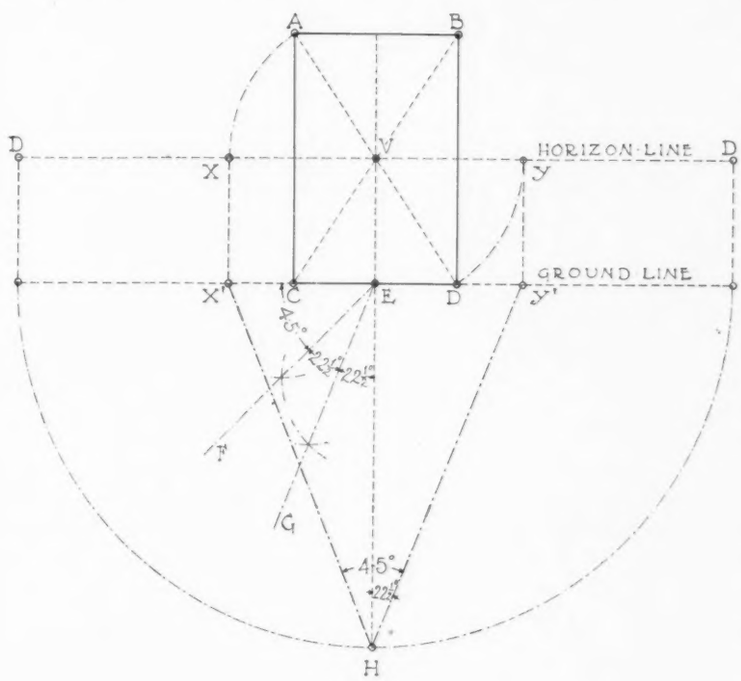


Figure 20

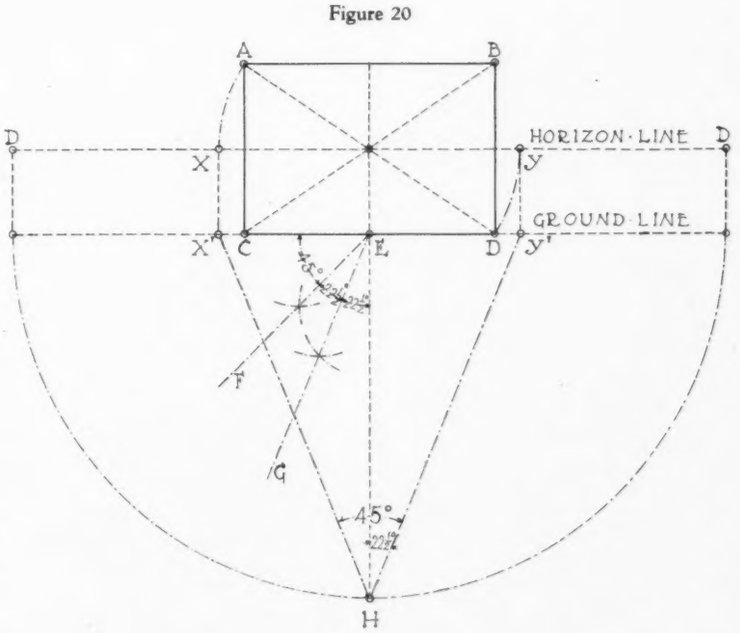


Figure 21

It will be noticed that, heretofore, much of our operations have taken place outside of our picture plane and, when the picture is to be of a relatively large size, the inconvenience of this fact is obvious. For this reason, the next step in our study of perspective drawing will be to take up short-cuts which will enable us to confine our operations within a much smaller area and eliminate the inconvenience that is inseparable from the use of a point that is far removed from our plane of operations. This phase of the subject will be taken up in the next instalment of this article and the methods used will be demonstrated.

At this point, however, it seems well to reiterate the statement made in the first instalment of this article that it is essential for the student to grasp firmly the relation existing between the "observer" and the "object observed," since this explains scientifically *how* and *why* we see things. The understanding of these laws of optics and of their application enables us to represent objects in perspective. The importance of mastering these principles cannot be overestimated and the student should make sure that he understands them.

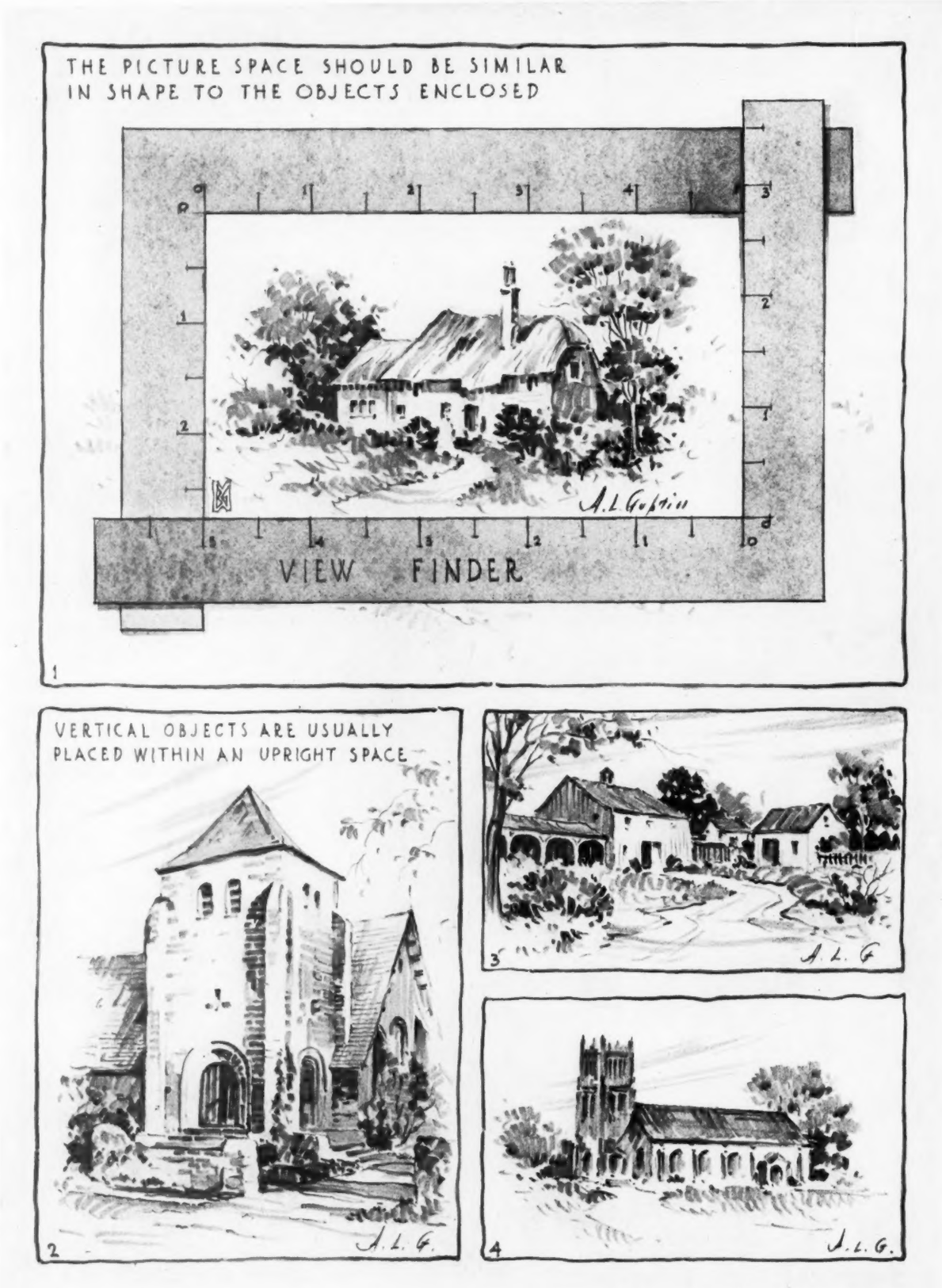


Figure 13. Illustrating the principle that shape of the picture should be similar to that of the objects which are enclosed.

SKETCHING AND RENDERING IN PENCIL, PART V

BY ARTHUR L. GUPTILL

In this series of illustrated articles, the first of which appeared in the August issue of this journal, the technique of pencil sketching and rendering is being taken up step by step, carrying the architectural draftsman or student through a systematic course of study which has been gradually developed and put into practice by Mr. Guptill in his classes at Pratt Institute, Brooklyn, New York City. The illustrations are not merely copy plates, but each is drawn to illustrate some principle of composition or suggestion for technique in the text.—ED.

Composition

MANY draftsmen and students easily acquire the ability to satisfactorily represent small details of buildings like bricks and shingles and even such larger parts as doors and windows, but the skill to compose these lesser units into a complete and well-balanced whole is not so easily gained. And yet the student who is unable to pleasingly arrange all the smaller parts into a fine composition is seriously handicapped, regardless of his cleverness in sketching each single detail, so though it may prove a difficult task it will pay him well to earnestly attempt to master the art of composition. Even though it is only through serious study and faithful practice that the necessary principles can be acquired, once they are understood it will be found that they apply equally well whether a drawing be large or small and whether it is hastily sketched or executed with painstaking care. The principles are valuable also when using other mediums than pencil, such as pen and ink or wash or color.

Our limited space prevents more than a brief outline of the most important of these principles, and a few hints as to what to do and what not to do, but these suggestions should be supplemented by reading books on the subject such as "Pictorial Composition," by H. R. Poore, A. N. A., "Composition," by Arthur Wesley Dow, and the chapter on composition in John Ruskin's "The Elements of Drawing." A study of such books will show a difference in opinion on some points, for composition is an art rather than a science, and it is impossible to lay down exact rules as to what should or should not be done. Perhaps the greatest value of such works is that they point out many pitfalls which lie in the path of the artist, and by analysis of the pictures of acknowledged masters, give the student a certain standard by which he is able to judge and criticise his own work. Though the study of books is very desirable, one should never forget that drawing cannot be taught by rule, and a hundred lengthy volumes could do no more than start one in the right direction and offer suggestions to assist him in his progress.

As the word "composition" means the putting together of things and the arranging of them in order, so as to make one unit out of them all, it is evident that we must first have good things to put together if the final composition is to be good. This means that in starting work we should use extreme care in the selection of our subject, not only as a whole but in each of its parts. Students, more especially the beginners, seem to be of the opinion that any object found in nature is a satisfactory subject to draw, and they are led into this belief, perhaps, by hearing statements to the effect that all nature is beautiful. It is not for us to deny this but it should be made clear that good pictures are not to be obtained ready-made by simply copying bits of nature at random. Amateur photographers are well acquainted with the fact that a successful photograph is not often secured by simply pointing the camera in any direction and making an exposure; it is necessary to give some thought to the selection and composition of the subject. Experienced artists often do produce good drawings by re-composing poor material, but the student will avoid difficulties if he chooses either something which is well composed in itself or which can be made so with few changes.

We have previously spoken of the advantage of using a view-finder when selecting compositions and wish to call attention again to its value. Of the several types in general use one which we have already described as consisting simply of a rectangular opening two inches or so in length cut in a piece of heavy paper or cardboard, is especially helpful when working directly from nature. By holding it in an upright position and looking through it at the objects beyond, it is very easy to select interesting subjects and to determine, too, how large an area or how much of an object or objects it is best to show to give the finest composition. Again it has another use, for if the student is in doubt as to just what slope should be given to a roof line or slanting tree trunk, a comparison of these inclined lines in the objects with the vertical or horizontal lines of the opening of the finder will be of great assistance in determining the correct slope or angle. The finder will help the student, also, to judge correctly the values of light and dark as seen in nature for each tone of the objects can be compared in turn with the value of the cardboard itself.

The other commonly used finder or frame consists of two "L" shaped pieces of paper or card, which will give, when lapped as shown at 1, Figure 13, an endless variety of shapes and sizes,

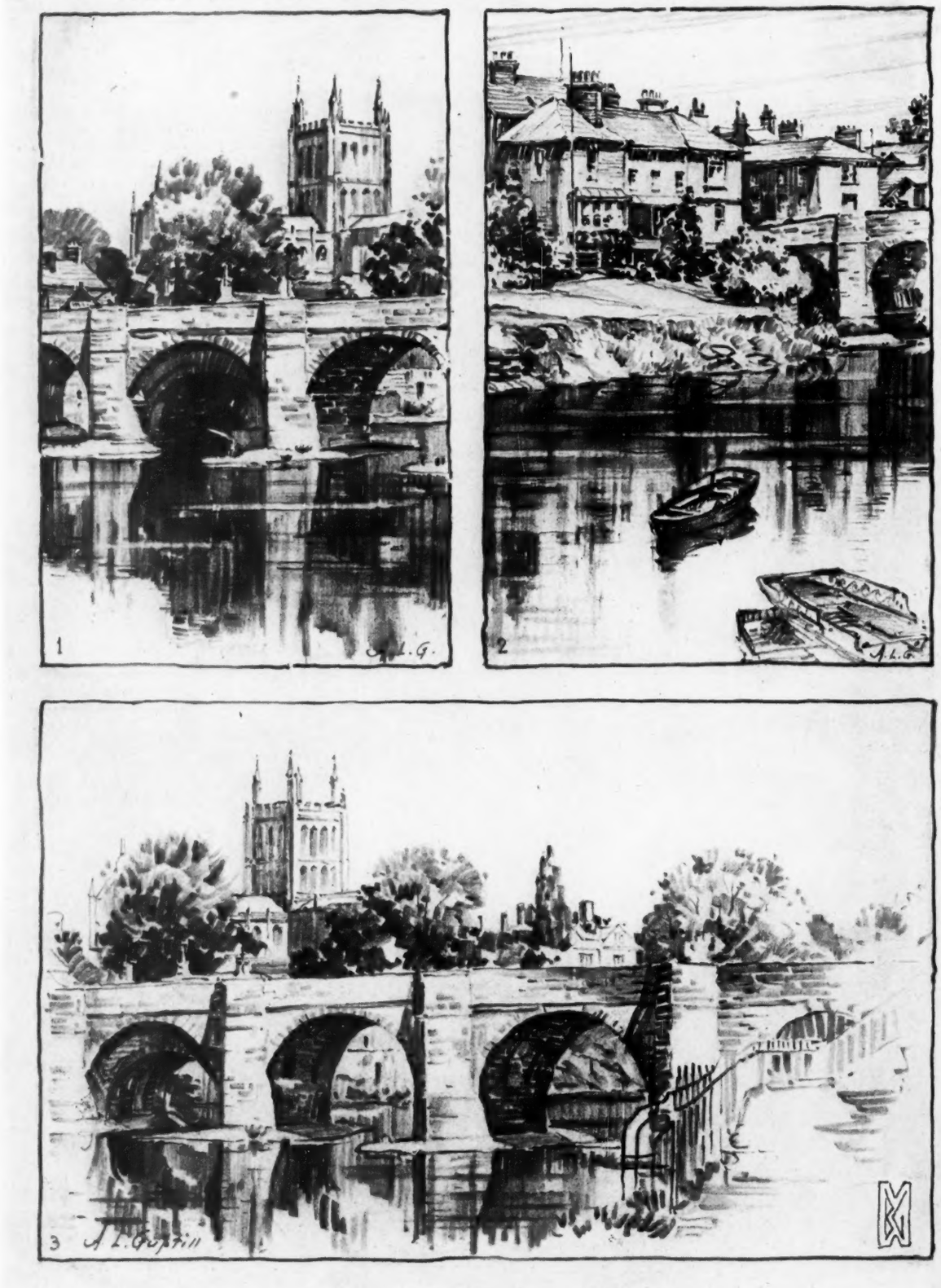


Figure 14. Illustrating possibilities in deriving inspiration from photographs. These sketches were all based on the photograph shown on the opposite page.

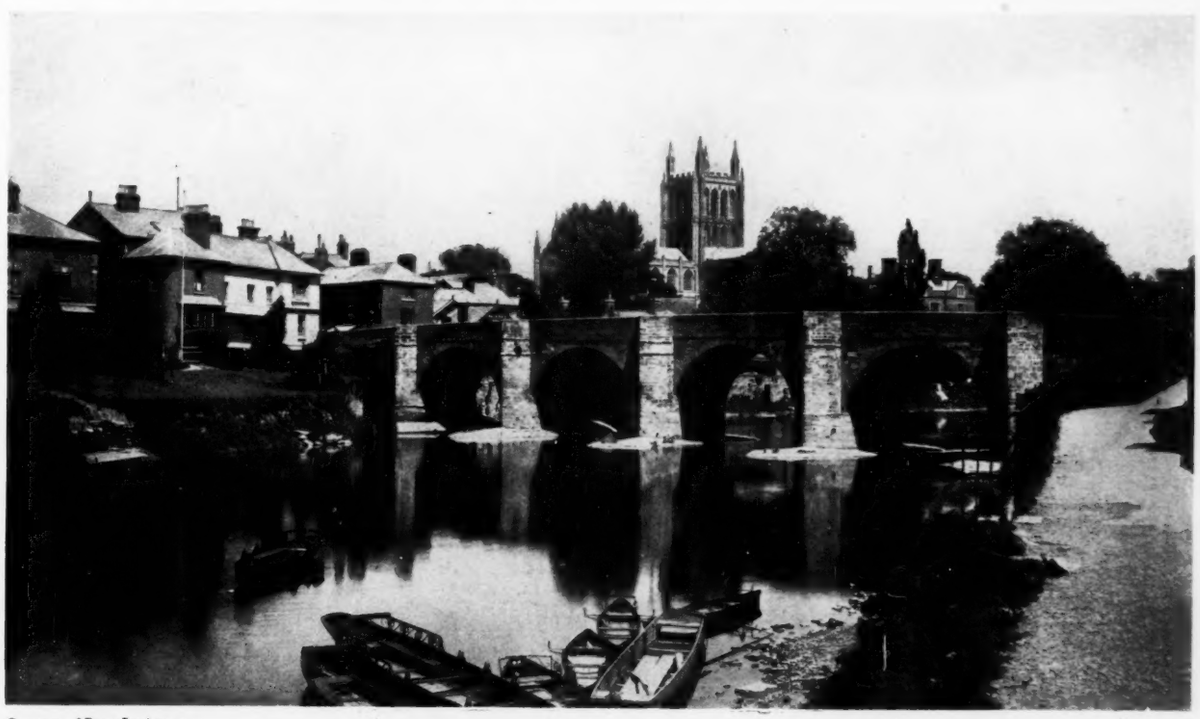
and it is, for this reason, much better than the other finder when working from photographs. As soon as a pleasing composition has been selected this frame can be clipped or pinned in position on the photograph and left in place until the drawing is finished. It thus serves to hide those parts which have no relation to the sketch and permits the eye to rest on the selected composition without distraction.

Some art students carry a view-finder of the kind first described with them constantly and gain a great deal of pleasure and useful knowledge of composition by studying different objects through its opening. In making one, cut several spaces through your card instead of one, if you prefer, of various shapes and sizes. They need not be large as the card can be held near the eye; in fact two or three small openings or a single large one can be made in a finder of postal card size. Sometimes threads are fastened across the openings from side to side and from top to bottom in such a way as to divide them into a number of smaller rectangles or squares. Those who have preference for this finder feel that it lessens the difficulty of laying out correct proportions when drawing from nature, just as in copying a photograph or enlarging a sketch the work is simplified when the print or sketch is marked off into squares or rectangles.

Several excellent compositions can often be found for the same object or objects when viewed from one point, by showing more or less of the surroundings, just as a number of satisfactory photographs can be secured. Naturally, too, an infinite variety of compositions of any architectural object can be discovered by studying it from various positions and under different lighting conditions. When working from the photograph several excellent sketches can sometimes be made from different portions of one print, especially if the picture is a street scene or a general view similar to that of the Wye Bridge and Cathedral, published below on this page. It is easy to frame a number of attractive compositions on this photograph and it would be to the students advantage to do so. Figure 14 shows three sketches drawn from this very picture.

It will be noticed that no attempt has been made to slavishly copy the values and details exactly as they appear on the print, for it is seldom wise to do this, but the general effect is indicated in a broad, simple way. There is perhaps no better manner of learning composition than by making such selections with the finder and also such sketches as we have shown here. For this reason the following exercises are offered to fix in the memory the ideas which we are considering.

First of all, obtain several photographs such as street scenes or general views, each showing a number of objects which might make pleasing sketches, and with the finder frame on one of your prints some selection which seems to compose well, remembering that each composition should have a center of interest. Remember, too, that there should always be a pleasing relation



Courtesy of Pratt Institute

Photograph of the Wye Bridge and Cathedral. Three sketches drawn from this photograph are shown in Figure 14

between the shape of the picture space or margin line and the subject itself. If, for example, a very tall building such as a skyscraper or church spire has been chosen, it is as a rule best to draw it on paper placed vertically or to frame it in a vertical picture space, whereas a long horizontal building or mass of buildings can usually be represented to the best advantage when enclosed in a horizontal manner. This has been illustrated in Figure 13. The English cottage shown at "1" at the top of the sheet, seemed, when viewed in connection with the nearby trees, to demand a horizontal treatment, while the church tower at "2" suggested at once a vertical handling. A group of buildings such as that shown at "3" usually calls for a horizontal space, for if the horizontal masses are more prominent than the vertical the fact must be recognized and expressed. Thus the church at "4" is given a long, low, frame, but if its tower alone was to be shown the contrary treatment would be more appropriate. As a general rule it is well not to use circular or oval or triangular frames or margin lines on architectural drawings as such shapes often have little or no relation to the form of the architecture itself. A square shape might be well related in this respect and therefore might sometimes do, but from an artistic standpoint a square is usually less interesting than any other rectangle. It is even true that certain rectangles are more pleasing than others. One with a length just twice its width is not as desirable, for instance, as another which is one and one-half times as long as it is wide, while even this proportion is less subtle and hence less satisfying to the eye than one about three parts wide and five long.

While discussing margin lines it might be well to mention that the line itself should never be so black as to draw the eye away from the subject. The width and tone of line should vary in different drawings so as to always be in harmony with the sketch. Again, attention should be called to the fact that sketches in some cases are carried way to the margin lines while in others they are allowed to fade gradually into the paper, or "vignetted" as it is called. In either of these cases if the exterior of a building is being drawn it will be found that the margin lines need not be far from the building itself, with the exception, perhaps, of the line at the top, as all spaces will appear much greater after they are rendered than before, for such surroundings as are generally used add a sense of distance. If too much space is left in such drawings the landscape and accessories may easily become too prominent in relation to the architecture.

When a selection has been decided upon and framed to a good proportion, fasten the finder to the photograph and then on very thin tracing paper with a soft pencil make a simple tracing, not in outline alone but in values, trying to give the effect of the whole in a direct and simple manner, with sufficient accent at the center of interest. Do not spend more than five minutes on the sketch and then frame the same object in a slightly different way and make a second tracing. Compare the two. If one is better than the other, why? Is it because you have shown more foreground or sky, or because the frame has been kept of a size or shape better suited to the leading objects? Ask yourself such questions and then make perhaps a third and even a fourth sketch, comparing them all with care, and if one seems better than the others, make a larger and more carefully finished drawing using this last sketch as the basis of your composition. Next try to find some entirely different composition in the same photograph, using a new subject, and make another series of quick sketches or tracings, and again compare them and analyse each, trying always to learn by this comparison why one composition is good and another not. Select a different photograph and repeat the process, or, if you feel that you have the ability to work in a similar way from nature, do so, choosing a comparatively simple subject so that each sketch can be done in a few minutes.

One will encounter more difficulty when working from nature, for whereas on the photographs the forms and values remain constant, in nature the values are always changing and the forms more difficult to represent. We have previously had occasion to mention that subjects which are full of interest and good in composition during some hours are entirely different under changed lighting conditions and buildings which appear to good advantage at certain times of day are much less pleasing at others. This is largely because the areas of shade and shadow are never the same for long. Part of the time they nicely balance one another so that the lights and darks are all well related. At other times too much light or too much dark appears at one side or above or below, thus destroying the restful effect. At some hours, too, there may be patches of shade or shadow so odd in shape as to prove distracting. It is therefore well to do your sketching during favorable moments, if this is possible, returning, if necessary, to the same subject at the same hour during a number of days in succession until the study is completed.

If a subject which is otherwise good in composition exhibits a few unpleasant features, either in nature or in the photograph, it is perfectly legitimate to take certain liberties with them, if by so doing the drawing can be improved without sacrificing the truth of the main idea. Should a tree, for example, seem a bit too small in relation to a building, or too light or dark in value, or should some shadow be too dense and black or form a displeasing mass, it is permissible to make such changes as seem necessary to improve the composition providing the final result represents a condition which might be possible under slightly different circumstances, without the breaking of any of nature's laws.

PRESENTATION DRAWINGS, PART V

BY FRANCIS S. SWALES

PRESENTATION drawings of commercial buildings are, apart from the plans, a field for a special kind of draftsmanship. A perspective is the first consideration. "Business," we are told, "exists by the consent of the buncoed." A business man is apt to regard the architect as lacking in all respects if he is "unbusiness-like." The perspective must be "business-like;" and, that is to say, it must not conceal the defects of its actual entourage. If there is a neighboring small and homely building to be picked upon, the "artist" must pick upon it with all his might—put "killing" wash over it to make it look dirty— show up its poverty, thereby enhancing by contrast the value "the plain but substantial improvement" which the new commercial structure will be to the vicinity.

Rendering which will reproduce well for the illustration of a prospectus or report, preferably by the half-tone process, is desirable. Monotone wash drawings (Figures 27 and 28) avoid the necessity of using orthochromatic plates, which are required to reproduce the color values of water-colors, and for that reason alone are to be preferred; but another consideration is, that such buildings often involve the personal interests of several individuals, and color may supply the pretext for discussions that lead to friction and delay of the work.

For monotone drawings, which may require the use of process white, the pencilling-in should be careful, firm and decisive. If too lightly executed the lines will be washed out or broken by the rendering; if careless, or "sketchy" the finished rendering will be "wooly" and require going over and re-pencilling, *before* touching with gouache, for if any pencilling is done over the body-color the lines will be hard and wiry and destroy all solidity of effect in the reproduction.

A point to be considered in the presentation drawing of a commercial building is that the surrounding streets should not appear to be "lonesome." The introduction of plenty of figures, vehicles, etc., is necessary to give the impression of a good business street.

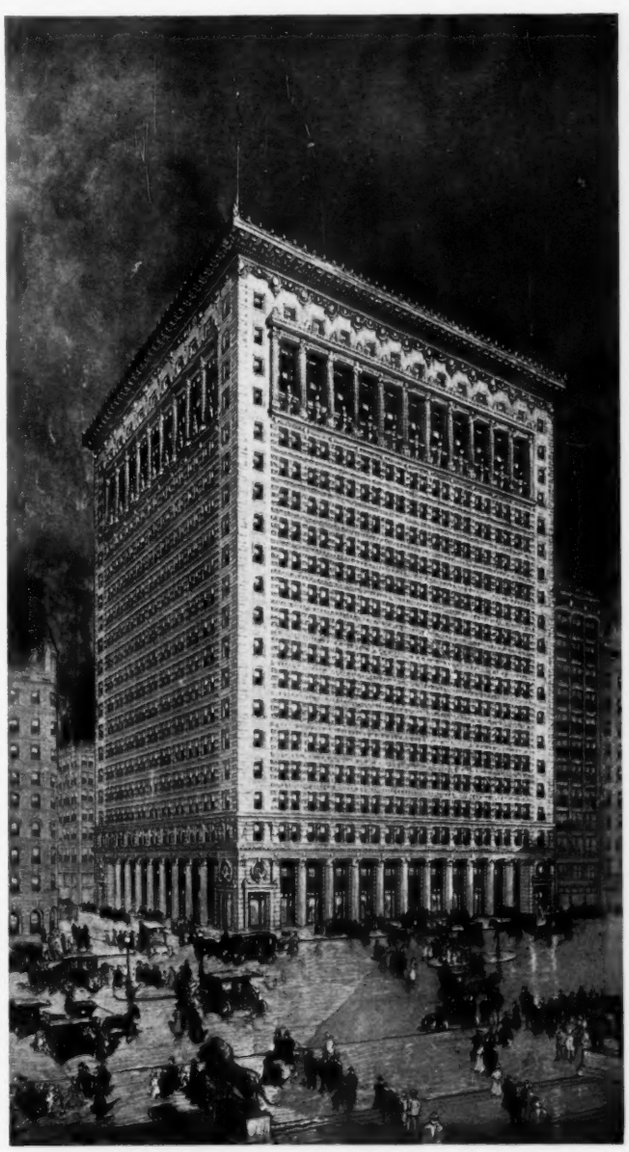
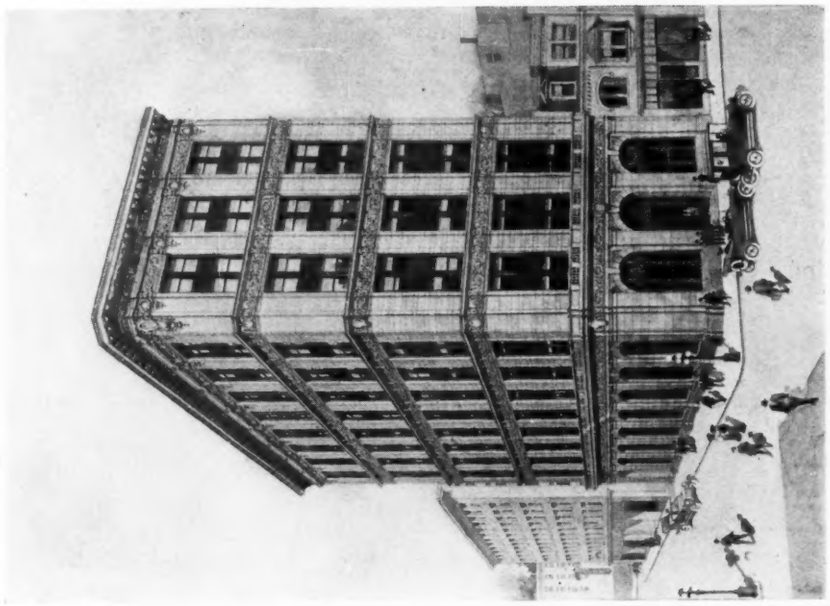
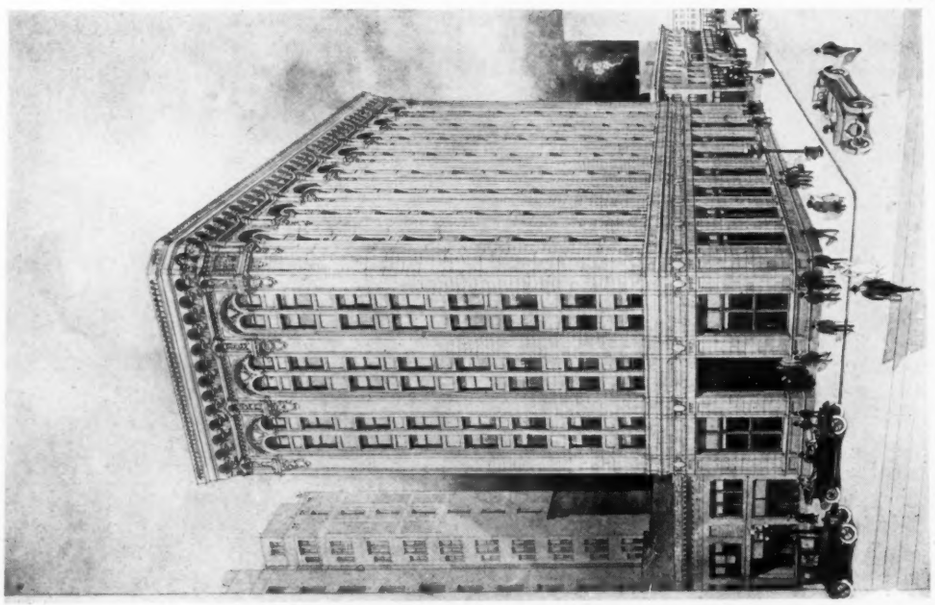


Figure 29. An Effective Drawing in Crayon and Gouache of the People's Gas Company Building, Chicago, Ill.
Graham, Anderson, Probst & White, Architects

A most effective drawing in crayon and gouache of the building for the People's Gas Company of Chicago was made some years ago by Mr. Pierce Anderson. (Figure 29). It has all the essential points desired by the business man, but has the effect, very unusual with such drawings, of being an artist's expression "free from the taint of the studio"—a big sketch. The impression created by this drawing is that the author conveys his idea of the design by the most direct means at his command and that the design—not the drawing—was uppermost in his mind. The presentation seems a mere sub-conscious matter executed with a facility that ignored any necessity of effort, and interestingly expresses the designer's idea.





Figures 27 and 28. The illustrations on This Page Show Monochrome Wash Drawings of Business Buildings Made with a View to Successful Reproduction in Booklets and Newspapers. Francis S. Swales, Architect

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HUGH FERRISS

HUGH FERRISS

THE series of notable drawings showing typical war industries, and his other drawings that have appeared in various publications, as well as his renderings done for many architects, have made the work of Mr. Hugh Ferriss well known.

His manner of presentation is direct and effective, conveying a strong impression of the subject by means of masterly technique.

It was while in the office of Mr. Cass Gilbert that Mr. Ferriss developed his ability in free-hand drawing to a point that made it possible for him to enter upon this line of work as a profession. That was, however, only the culmination of a long course of study and experiment which gave him his clarity of vision, and his individual method of drawing, his individual way of analizing and presenting his subjects.

Mr. Ferriss was born in St. Louis, Mo. He received the degree of B.S. in Architecture from Washington University in 1911. He was a draftsman for a year with Moriner & La Beaume, architects, St. Louis, and took a sketching trip abroad. He was three years with Mr. Cass Gilbert, and during that time studied rendering especially, leaving to establish his own studio in 1915.

He was commissioned to make a series of studies of architectural features of eastern and middle-western cities for the chambers of commerce. These drawings appeared in exhibitions and newspapers and a resumé of the work was published in *Harper's Magazine*.

His war-time studies included renderings of the great United States Army Base, in Brooklyn, shipbuilding activities with the authority of the Navy Department and the Shipping Board. These renderings were used by the Department of Public Information, Liberty Loan Exhibitions, appeared in *The New York World, The New York Tribune* and were syndicated.

Mr. Ferriss' present work is entirely of architectural subjects and is used by architects, publishers and advertisers. His work appears in *The Nation's Business, New York Tribune, Vanity Fair*, and other publications, and he is on the staff of *The Christian Science Monitor*, contributing architectural and travel sketches. In the advertising field he does publicity work for The Guaranty Trust Co., The Bankers' Trust Co., and many other important organizations.

THE USE OF SCALE MODELS.

(*Continued from page* 5)

scale model further by providing walls of compo board with openings to scale, thus optaining exactly the same conditions of lighting that will exist in the build ng. The color scheme of the ceiling could then be seen under exactly the same lighting that it would have in reality.

The writer recently made a small ¼-inch scale sketch model of cardboard and colored it like the different materials The walls were of Travertine plaster. The ceiling was first tried in dull antique gold. Another sketch was made of the same design for the ceiling and colored in much lighter tones recalling somewhat the color of the walls. These two studies were then tried on the model. It was surprising to see how much lower the darker gold ceiling looked than the lighter one.

But this aspect of the use of models would in itself make a very interesting article, if some of the painters who have made a special study of mural work could be induced to tell what the possibilities are. It would be well if color were used more often for the purpose of study without going to the unnecessary expense that is incurred usually when models are made for exhibition purposes.

Note—The models for the National State Bank, Elizabeth, shown in illustrations in this issue, and those shown in the November issue were by Ricci, Ardolino & Di Lorenzo.

THE ARCHITECTURAL LEAGUE OF INDIANAPOLIS.

THE Architectural League of Indianapolis is a new organization based upon that of the Architectural League of New York City, with some changes that were considered necessary to adapt it to local conditions.

The first meeting was held April 13, 1920 and charter membership is still open as it is hoped to reach everyone personally who might be interested or benefitted by an organization of this character.

It is the purpose to bring about a closer association and co-operation of the architects, sculptors, landscape architects, draftsmen, painters, decorators, and all the allied artisans.

Arrangements have been made whereby the League will have use of lecture and class rooms at the John Herron Art Institute. The League is responsible for the local atelier of the Beaux-Arts Institute of Design, which has a following of about thirty-five students. Courses have been arranged in Architecture and Interior Decoration. Beginners will have a special class to train them in the elements of design to prepare for Beaux-Arts problems.

An interesting course of lectures is planned for the Winter. Several small exhibitions will be held and later it is hoped that some large exhibition of local work may be arranged for and advantage taken of some of the large traveling exhibits.

The League is a post-war effort to revive interest in artistic organization and to increase public appreciation of the arts. All lectures are being widely advertised and are open to the public. An elaborately planned St. Valentine's Ball in costume, to be given February 8. The secretary of the League would be glad to correspond with other organizations, for the purpose of exchanging ideas which would be of mutual benefit, and to learn of possible lectures and exhibits.

GET A GREEN CARD.—Adv.

THE ARCHITECTURAL CLUB OF THE UNIVERSITY OF TORONTO.

The Department of Architecture in the Faculty of Applied Science and Engineering of the University of Toronto has in connection with it an organization formally called the Architectural Club of the University of Toronto. This society is composed entirely of under-graduate and graduate members of the Department of Architecture.

Its aim is to increase the interest of the students in the department, and to keep in touch with the active profession.

An honorary president is elected annually, usually a member of the faculty or a practicing architect.

Throughout the winter it is customary to hold informal dinners at frequent intervals, having as guests and speakers architects or others distinguished in the allied arts.

The program for the present academic year includes such interesting topics as town planning and civic development, architectural jurisprudence and economical construction of the small house. The general idea is to study subjects which most vitally concern the profession at the moment.

Our department is very fortunate in adding to its staff in design Prof. Adrian Berrington of the University of Liverpool. Prof. Berrington has just recently been demobilized after more than five years Active Service with the British Army.

It is the intention of this club to keep in touch with PENCIL POINTS and to write periodically regarding our activities. With numerous other clubs doing the same, mutual benefit is bound to be the result.

Very sincerely yours,

A. SCOTT CRAWFORD, *Secretary.*

GET A GREEN CARD.—Adv.

PERSONALS

R. M. KENNEDY, who returned from Rome not long ago, having finished his studies as a holder of the Rome prize during 1915-1918, is now with York & Sawyer.

GEORGE M. HOPKINSON AND WELLINGTON J. SCHAEFER have formed a partnership for the practice of architecture and engineering under the firm name of Hopkinson & Schaefer, with offices at 5716 Euclid Avenue, Cleveland, O. Mr. Hopkinson was until recently with W. L. Stoddart and Mr. Schaefer was formerly with Marshall & Fox.

TILDEN & REGISTER, architects, announce the removal of their offices to 1525 Locust Street, Philadelphia, Pa.

CROFT & BOERNER, architects and engineers, have moved to 1006 Marquette Ave., Minneapolis, Minn.

JOSEPH A. HICKEY, architect, is now located at 142 Atlantic Ave., Providence, R. I.

Below is shown a publication that, by its style and manner of production, offers suggestions to architectural clubs that cannot attempt the printing of a journal in the usual way, but would be benefitted by having a sheet of their own. This illustration shows the negative typewritten on thin specification paper backed by carbon paper. The illustrations are drawn in black ink. From such a negative, blue prints can be made. This publication was issued by the office of Cass Gilbert for the boys from the office who were at the front during the war. It was edited by Mr. Chas. A. Johnson.

The Office Nuisance

Published for the boys over there by the office of Cass Gilbert

Volume 1. January 4th, 1919. No. 7.

Mr. Gilbert has had conferred upon him the title of Chevalier of the Legion of Honor of France.

The following letter was received from Pete.

"Our base was at Corfu, Greece, and our regular job was to "eat" the subs passing in and out from Austrian ports. Our usual "Barrage" or patrol work was on a line between Corfu and Otranto, on the heel of Italy. But sometimes convoy work took us to Italian and Sicily ports. Our route "Over here" was via Bermuda, Azores, Gibbraltar and Malta.

Did you hear of the Job the chasers did at the attack on Durrazzo, Oct. 2nd? Well, the worst is over, but our work is not yet done. You will be surprised to know that I am writing this in an Austrian port, Pola. Have been in three big Austrian bases and it sure is interesting seeing what was recently enemy country. And we had shore liberty too.

The Jugo Slavs treat us fine. But it would take a mint of money to live ashore. What would you say to paying forty bucks for a pair of shoes?

Don't believe we will see the States before April or May at the earliest. I haven't seen Lake for several weeks, as our boats are scattered all along the coast."

Mr. Gilbert hopes to find a place in the office for every one of the fellows who went into the service "if - as, and when" (to use the Stock Exchange phrase) they come home, provided they want to come in, and will give preference to the old crowd first. He can't say yet whether the work in the office will permit him to enlarge the present force but he will do so if he can.

Miss Schaeffer has returned to the office after having spent a vacation at Atlantic City recuperating from an attack of the "flu". We are all glad to see her on the job again.

Now that Miss Schaeffer is back in the office, Miss Archer has gone on her vacation. She said that she is going to spend it in the country driving a Flivver milk wagon from the farm to the station. This helps to explain the present milk shortage in New York City.

A life class has been organized in the office and a studio rented in the Lincoln Square Arcade Building. Class meets on Tuesday night.

E.W. says we ought to be in the life class in Sing Sing.

Mr. Rockart started his annual spring cleaning at the beginning of the new year and the result was a large pile of ancient competition drawings, sketches and shop drawings. He stood looking at it with an expression on his face of "now that I've got it what'll I do with it" when Mr. Gilbert came into the drafting room. Mr. Gilbert said it looked like a pile of junk and suggested that it be piled on top of ye honorable editor's table.

P.S. Why pick on me?

Through the courtesy of the Secretary of the Navy Mr. Gilbert viewed the return of the fleet from the Press Boat with the Division of Pictorial Publicity of the Committee on Public Information. Mr. Gilbert was one of the vice-chairmen of the Division of Pictorial Publicity from the time it was organized until its services were no longer required after the signing of the Armistice.

Contributed by Cupie Crane

Its plain to see why Matty ocean likes boatink!

E.G.C. - entertaining Captain Potter at dinner. "Have some coffee Pot?"

Illustrated by Stuart May.

Classified Advertisements

Advertisements in this column Five cents a word, none less than $1.00. Remittance must accompany order.

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FOREWARNED IS FOREARMED

The issue of January, 1921, of PENCIL POINTS will be number one of the new volume (Vol. II). A great many of you missed Volume I; do not make the same mistake with Volume II. Tell your friends to make sure this time.

Take time by the fore-lock

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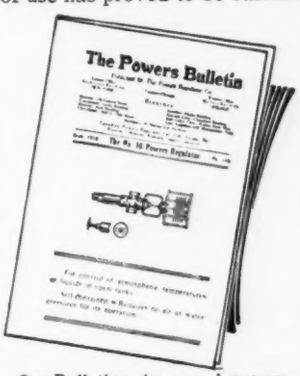

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QUERIES

In this department PENCIL POINTS *will endeavor to answer questions of general interest pertaining to Architecture and allied arts, giving the best available information from authoritative sources. We desire that you feel free at all times to make use of this service, inviting your co-operation in making the department both interesting and valuable. Should you desire an answer by mail, enclose stamp for reply. Address queries to,* PENCIL POINTS, *(Attention of E. M. Urband), Metropolitan Tower, New York City.*

Question.—Can you advise me of some manufacturers of Steel and Iron Factory Stacks (Chimneys)? F. E., Reading, Pa. *Answer.*—See Hendricks' Commercial Register of the United States, 1919-1920, under heading "Chimneys and Stacks." This book can be consulted in some of the larger public libraries.

Question.—Will you please print list of books that will help with construction of garages? G. T. E., Hamilton, Ontario. *Answer.*—"Garages and Motor-boat Houses," Comstock, William Phillip; "Your Garage," Chas. R. W. Edgecombe, National Lumber Manufacturers Association; "Making a Garage," McBride, Nast & Co.; "Garages, Country and Suburban," *The American Architect*, 1911; "Radford Garages and How to Build Them," The Radford Architectural Company.

Question.—Can you advise me what good practical books are available as a guide to good architectural lettering? A. B. M., Bluefield, Va. *Answer.*—"Architectural Drawing and Lettering," H. V. V. Hest; "Letters and Lettering," Frank Chouteau Brown; "Practical Alphabets," H. W. Flickinger; "A Roman Alphabet and How to Use It," Frederick Frank Forrest; "The Essentials of Lettering," Thomas Ewing French; "Modern Lettering," William Hehny; "A Treatise on Hand Lettering," Wilfrid James Lineham; "A Grammar of Lettering," Andrew W. Lyons; "A Handbook of Lettering," Edward F. Strange; "Alphabets Old and New," Louis F. Day.

Question.—Where, in New York City, may I obtain or see a copy of the bulletin of the University of Illinois, published several years ago, entitled "An Extension of the Dewey Decimal System of Classification as Applied to Architecture and Building." By N. Clifford Ricker? C. H. S., Yonkers, N. Y. *Answer.*—Ricker (Nathan Clifford), An extension of the Dewey Decimal System of Classification applied to architecture and building, 1906—Illinois University, Illuminating Engineering Experimental Station, Bulletin No. 13, can be found in the New York Public Library.

Question.—Please advise what good books are obtainable on interior decoration. M. W., Biloxi, Miss. *Answer.*—"American Architecture," by Frank E. Wallis; "Period Furnishings," by C. R. Clifford; "The Book of Interior Decoration," by Frank Alvah Parsons; "Practical Book of Interior Decorating," by Eberlein & McClure; "The House in Good Taste," by Elsie de Wolfe; "Motifs Historiques," by Cesar Daly; "Versailles and the Trianons," by Lambert; "Italian Furniture and Interiors," by Hunter; "Decorations, Interieurs et Meubles, Louis XIII, Louis XIV," by Adams; "English Furniture of the Eighteenth Century," by Cescinsky; "The Practical Book of Period Furniture," by Eberlein and McClure; "The Book of Decorative Furniture, Its Form, Colour and History," by Foley; "Chats on Cottages and Farmhouse Furniture," by Hayden; "Furniture and Decoration in England, During the Eighteenth Century," by Heaton; "La Musee des Arts Decoratifs," by Lambert; "Colonial Furniture," by Nye; "Le Palais de Fontainebleau," by Roussel; "French Decoration," by Strange; "American Interior Decoration"; "Decorations Interieurs," by Boucher; "Elizabethan Interiors," by Charles; "Interiors, Fireplaces and Furniture of the Italian Renaissance," by Eberlein; "Italian Renaissance Interiors and Furniture"; "L'Architecture Francais"; "In English Homes," by Latham; "Decorations in England from 1660-1760," by Lenygon; "Palais du Grand Trianon"; "Palais du Petit Trianon"; "Pompeian Decoration," by Briggs; "The Art of Color Decoration," by Crace; "Interieurs de Style," by Remon; "Architecture, Decoration and Furniture," reprint from the "Works of Robert and James Adam"; "A Book of Mantels," Adam; "The Art of the Plasterer," by Bankart; "Decorative Styles and Periods," by Condee; "Percier et Fontaine, Style Empire"; "Friezes, Panels, Ornaments, Etc.," by Salembier; "Grinling Gibbons and the Woodwork of His Age, 1648-1720," by Tipping; "The Decoration of Houses," by Wharton and Codman.

THE UNIVERSITY OF TEXAS.

Enrollment in the Department of Architecture of the University of Texas this year shows an increase of 35 per cent. over that of last year. The total enrollment last year was 55; this year it is 74. Of the total enrollment last year 14 were women; this year there are 19 women in the department as regular students. These figures show that 25 per cent. of the students who study architecture are women. Special students from the College of Arts who are taking art courses are not included in these records. The total number of special students is 29, and 85 per cent. of these are women. The favorite courses among the special students are art courses, including charcoal drawing, water color painting, history of painting and sculpture, and history of architecture.

The Department of Architecture was established as a division of the College of Engineering in 1909. For the degree B. S. in Architecture there are two degree routes, namely, General and Fine Arts, requiring respectively twenty-one and twenty-two courses, or four years of college work. A four year course is also offered leading to the degree of B. S. in Architectural Engineering. The class in architectural design uses as a basis the problems sent out by The Beaux-Arts Institute of Design.

The architectural teaching staff consists of three well-prepared men—E. B. La Roche, J. M. Kellogg, and H. N. June—each of whom is a graduate of a leading American university. The first two named graduated in architecture at Cornell and the third at Pennsylvania. A combination of teaching and practical experience fits these men for their work in training students in architecture.

Credit for the design of the ticket for the Hallowe'en Party of the T-Square Club, Philadelphia, should have been given to Mr. Wm. M. Campbell in connection with the reproduction of the design in the November issue of this journal. It is a good design, appropriate, and effectively done; we are glad to take this opportunity to give proper credit to the designer.

ARCHITECTURAL ACOUSTICS

CHAPTER V

IN the popular mind, the terms reverberation, echo and resonance, are generally used as synonyms, but to the physicist they represent three entirely distinct classes of phenomena. We saw in our last chapter that by reverberation is meant the prolongation of sound in an enclosed space due to a slow rate of absorption. If the contour of the reflecting surfaces is such as to bring the sound waves to a more or less sharply defined focus at one or more points, thus causing an image or repetition of the original sound, we then have a case of echo. Much the same relation exists between reverberation and echo as between diffuse and specular reflection of light. In other words, echo arises from a mirror-like action of surfaces surrounding the source of sound, and is subject to laws entirely similar to the laws of mirrors for light.

If the source is situated with respect to a spherical or cylindrical surface, such as dome, pendentives or barrel vault, so that it is distant from the surface by more than half the radius of curvature, then an image or echo will be created at some point. This focus may be located in a region not accessible to the ear, in which case it will do no damage, but in many cases pleasing architectural contours throw the focus directly on the audience. If the reflecting surface has a regular curvature and if the path the sound travels is sufficiently great, a sharp and distinct repetition of the original sound will be produced at the focal point. In some cases, however, an irregular curvature or combination of reflecting surfaces causes only a concentration of sound in some definite locality without producing a sharp focus, and the result is to create a marked confusion between the reflected sound and the direct sound-wave at this point, which results in one of those so-called "dead spots," about which so much is frequently heard in lay criticisms of acoustics.

Interesting cases of distinct echo are to be found in Statuary Hall of the U. S. Capitol at Washington, and in the Mormon Tabernacle at Salt Lake City. In the majority of cases, however, echo has a damaging effect on comfortable hearing for an audience and should therefore be eliminated as far as possible. This means that the surfaces which focus the sound must have their absorbing power largely increased so that the reflected waves will be weak in intensity.

The materials ideally suited for this purpose are those which we mentioned in our last chapter, namely, RUMFORD TILE and AKOUSTOLITH. By using these highly absorbent materials (See Curve 3) as a facing course over tile arch construction for domes or other vaulted forms, the triple advantage is secured of eliminating the echo, reducing the reverberation and at the same time maintaining a structural verity through the use of masonry material. Two notable examples of this type of work are to be found in the Temple B'Nai Jeshurun at Newark, New Jersey, and the University Museum of the University of Pennsylvania at Philadelphia.

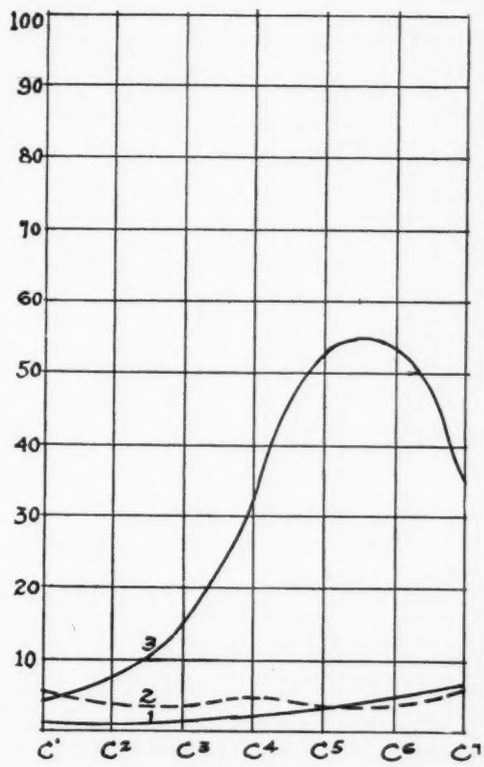

FIGURE 1

The above graph shows the variation of absorbing power for reflected sound with the musical pitch. Curve 1 shows the absorption of unpainted brick surfaces. Curve 2 shows the absorption of soft plaster on wood lath. Curve 3 shows the absorption of Akoustolith sound-absorbing stone. The figures at the left show the percentage of absorption, while the letters at the bottom indicate octave intervals of pitch, C³ being "middle C." Most of the audible energy of the voice, as well as other sounds, lies in overtones above C⁴. It will be noted that in this region the absorbing power of AKOUSTOLITH is from seven to sixteen times greater than the most favorable of other types of construction. The advantage over glazed tile, concrete or hard plaster on metal lath is even greater.*

**Akoustolith is an artificial stone and can be cast in the form of tile, wall blocks or in ornamental forms.*

In addition to reverberation and echo, resonance sometimes but not usually becomes a disturbing factor. By resonance we mean the response of the body of air in a room to some definite pitch, causing that tone to be accentuated above all others, just as the column of air in a partially filled tumbler of water will respond to and re-enforce some one definite pitch of sound produced above it. This phenomenon is most often noticed in organ chambers and small auditoriums or class rooms, but is not sufficiently common to need much consideration. It can be eliminated by the use of absorbent materials as in the case of reverberation and echo.

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THE SPECIFICATION DESK

It is the purpose of this department to cover all matters having to do with specifications. The Specification Desk is to be an open forum to which manufacturers as well as architects, draftsmen and specification writers are invited to contribute. Nothing of an advertising nature will be permitted but it seems to the publishers wholly desirable that those who prepare specifications and those desirous of having their goods specified shall meet on common ground in this department of PENCIL POINTS. *It is not the idea that the merits of materials shall be discussed in these pages but rather those broad questions which come up in connection with every building operation for which the specifications prepared in the architect's office form the basis not only for the builder's estimates, but also for the determination of the materials and equipment to be used.*

The readers of PENCIL POINTS *are invited to submit material for this department, either in the form of questions or suggestions calculated to improve any phase of specification work.*

THE SPECIFICATION WRITER AND THE MANUFACTURERS' LITERATURE, PART V

BY LOUIS R. HOLSKE

CONTINUING to point out the kind of information the architect or specification writer would like to find in the catalogues and other printed matter issued by manufacturers, we shall touch upon various materials and manufactured articles in this issue, with the purpose of helping the manufacturer in his effort to supply this information. Reinforced concrete, the concrete beam and tile or steel filler type of floor construction, waterproofing, vault lights and miscellaneous metal work are here considered from this point of view.

Reinforced Concrete Work—Form and area of the steel reinforcement and its place in the concrete. In all concrete buildings having a veneer of other material the architect would like to know the method of anchoring the veneer—further he would be interested in methods of anchoring other work in the interior, including equipment.

Concrete Beam and Tile or Steel Filler Type of Floor Construction—Size of the units, methods of closing ends, amount and form of steel reinforcement in the beam and also the methods of anchoring lathing to the ceiling either directly or hung some distance down if required.

Membrane Waterproofing Work—The nature of the felt or fabric, its strength and the material of saturation, and at the same time, the melting point, the nature of the binder, which should be the same material as that used in saturating the felt or fabric, its melting and brittle points.

Integral Waterproofing Work—The nature of the compound used and some authentic tests of its efficiency. Methods of flashing around piping and of connecting to membrane waterproofing.

Cut Stone Work—The classification of the stone—geologically and its crushing strength. Whether it is a lamminated or crystalline formation.

The Vault Light Construction—How a bond between the glass and mortar is obtained and something of its strength, also the quality of the glass and its annealing. The architect should require a polariscope test of each light to detect imperfect annealing. Further he would like to know if the lights are readily replaceable.

Miscellaneous Metal Work—This class in a specification usually embraces a great many manufactured articles. An attempt to cover the entire field will not be made, but typical questions to indicate the character of information needed will be noted. In addition to such items as are usually found in the average building there are a great many kinds of special equipment such as that for the barn, stable, garage, green-house, library, laundry, kitchen, etc., all of which would require a great deal of space to cover in detail. These items will be considered without any attempt at a studied arrangement. Only a few of the more familiar items will be considered as sufficing to illustrate the principles involved, and when possible they will be grouped.

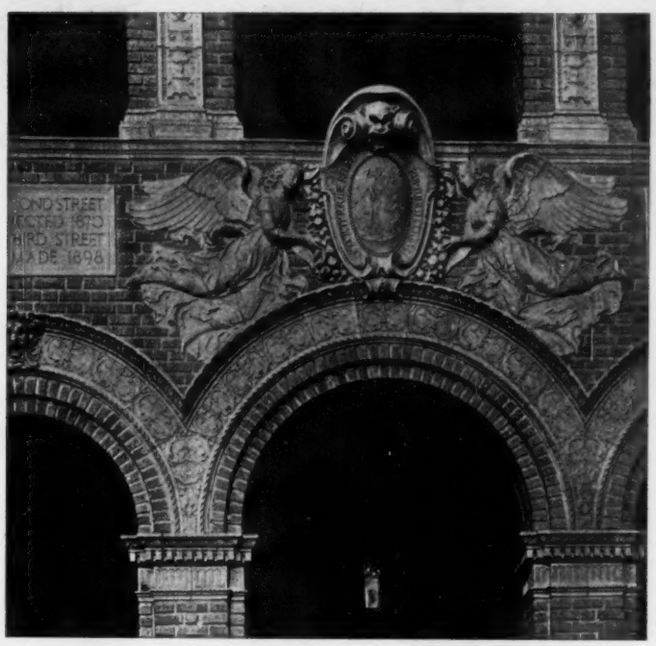
Store Front Construction—How is ventilation or air movement provided for to eliminate as far as possible condensation with its consequent frost in cold weather? How is the glass held in place? Is the metal in direct contact with the glass or is a more pliable material introduced? If the glass is supported only at intervals, what is the spacing of the supports? What provision is there for the expansion and contraction of the glass? Is the frame readily re-glazed in case of breakage? Is a gutter and drip provided in the sill? Is space for an awning provided in the transom or head? The architect would of course expect large scale or full size details showing the entire system and clearly the points touched on above.

PUBLICATIONS OF INTEREST TO SPECIFICATION WRITERS.

Designs for Houses of Indiana Limestone—A reprint of a competition for a detached residence of Indiana Limestone, that appeared in The Architectural Review, September, 1917. Shows the prize winning designs and the Jury's criticisms of the various designs. The reprint is obtainable by our readers from the Indiana Limestone Quarrymen's Association, P. O. Box 400, Bedford, Indiana, and is listed as Volume 27 of the Library Series.

The Garage—This brochure is one of a series of five brochures on buildings of different types. The qualities which architectural terra cotta presents to the architect, in ornament and resistance against the forces of destruction, are given in the introduction. Many garages are illustrated, also filling stations and auto sales buildings. The finish and color of the material is noted. Size 10½x 13¼ in. 36 pp. A copy will be sent free to readers of PENCIL POINTS on application to The National Terra-Cotta Society, 1 Madison Avenue, New York City.

Firefoam Automatic Sprinkler System—A booklet the text of which explains the speedy action of the constituent chemicals for retarding and extinguishing fires by blanketing action without water damage and the color diagrams explain the arrangement of the parts of the system for effective and immediate protection from fire hazard. Size 8¾x11 in. 8 pp. Issued by The Firefoam Co., 200 Fifth Avenue, New York.



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